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the
story of
**MODERN
LACQUER**

HERCULES POWDER COMPANY
INCORPORATED

Wilmington, Delaware

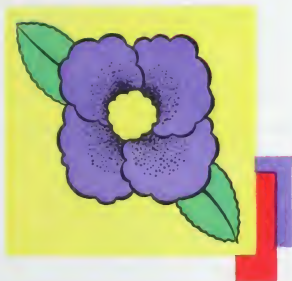


THIS BOOKLET is for those who are unfamiliar with nitrocellulose* lacquer, and for those who may be using it now but who could profit by putting it to new uses. We are interested in the subject because we supply the nitrocellulose for much of the lacquer made in this country. As we are not manufacturers of lacquer, we are not biased in favor of any brand.

Modern lacquers consist of nitrocellulose and certain solids reduced to a liquid in volatile solvents. These quick drying, modern products are in contrast to the lacquers of ancient times which were made chiefly by processing vegetable gums. Modern nitrocellulose lacquers, however, have had a longer history than most people realize.

In recent years, there has been a tremendous growth in the use of lacquers. The improvements in manufacture of nitrocellulose developed by the Hercules Powder Company have made it possible to produce lacquers with a much wider range of useful

*Nitrocellulose is the basic ingredient in modern lacquer. It is a chemical combination of pure cellulose (cotton) and nitric acid.



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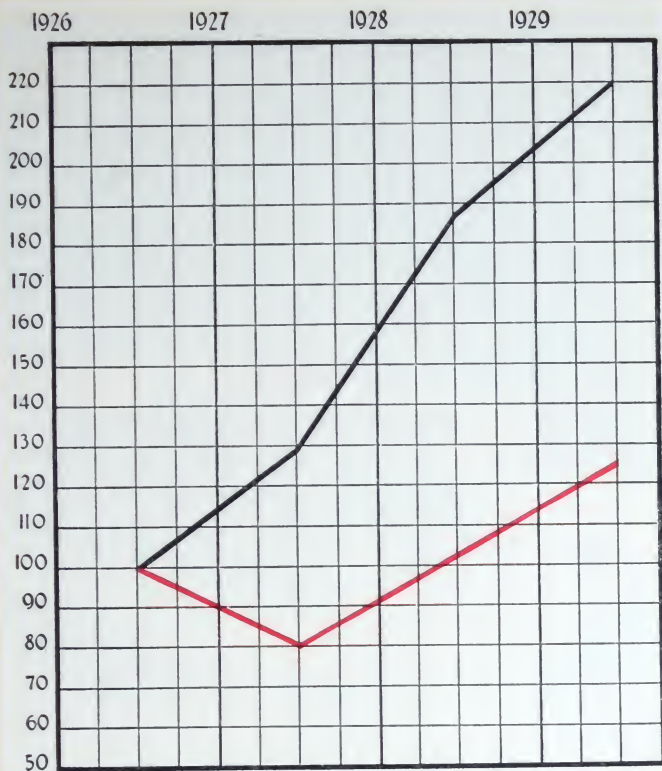
ness. The growth of the automobile industry has contributed to the increased use of lacquer, and the fact that practically all cars are now lacquered has helped to make lacquer generally known; but, as we shall see, this has not been the governing factor in the growth of lacquer consumption.

In the years from 1926 through 1929, lacquer sales have considerably more than doubled. We start with 1926 because practically the whole automobile industry had adopted lacquers by that time. If, as is sometimes thought, the growth of the automobile industry is chiefly responsible for the growth of the lacquer industry, the former should also show somewhere near a 100% increase during the same period. Actually, the increase in automobile production of 1929 over 1926 is about 15%.

The diagram on the opposite page shows clearly that consumption of lacquers goes steadily ahead



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The black line indicates Lacquer Production
The red line indicates Automobile Production

whether automobile production increases or decreases. The gain of 38% in sales of lacquer during 1927, in the face of a 23% decrease in the production of automobiles, is less than the gain in 1928 when automobile production moved up sharply; but it is sufficient to convince anyone that the reason for the

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Purification Area Hercules Nitrocellulose Plant

rapid strides of the lacquer industry cannot be explained in terms of motor cars produced.

New uses for lacquer and new applications for known uses are constantly being developed, as often by ingenious industrialists searching for ways to improve their products and reduce expenses as by those who are trying to increase the sale of lacquers. This, together with the steady growth in standard uses including automo-

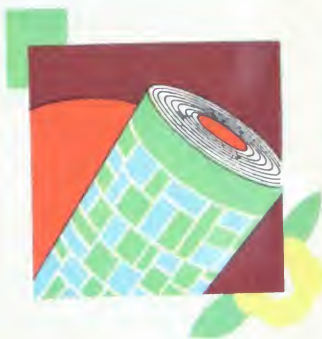
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bile finishing but not dominated by it, accounts for the amazing progress of the lacquer industry.

Lacquer is used more and more every year, because people like you are trying to cut costs and to make their products more readily salable by improving their appearance or their durability. Sometimes they make their own experiments; find that lacquer solves their problems, purchase it, and inaugurate a new use or application without the lacquer manufacturer's knowing anything about it. Salesmen are constantly stumbling upon situations of this kind.

In other instances, the lacquer manufacturer is called in and assists in developing the new use. This procedure is generally advisable, because it often happens that the lacquer manufacturer has had experience with a similar problem and can solve it at once, saving the time and expense of experimenting.

As a result of such development work by lacquer manufacturers, it is now possible to employ lacquer successfully for many purposes for which, only a short time ago, it was thought to be inappli-



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able. A disappointing experience with lacquer even a short time ago does not prove that disappointment would follow its use for a similar purpose today.

What are the main differences between lacquer and other commonly used finishes? One of the advantages of lacquer which has been widely heralded is quick drying. Incalculable savings to industry have indeed been brought about by reducing days to hours and hours to minutes in the time which must be allowed for drying. The great value of this time-saving in speeding processes, reducing drying and storage space, and increasing the turnover of capital, is obvious. In many instances, this feature alone is important enough to make lacquer the inevitable choice.



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It is probable, however, that the emphasis put upon this characteristic of quick drying, and the readiness with which its significance is grasped, have served to detract in a measure from a general understanding of other valuable properties of lacquer. Most finishes are, to a more or less degree, pervious to moisture; lacquer is highly resistant to it. It is this quality that has made it so valuable to the metal industries. It preserves metal surfaces from rust, corrosion, and tarnishing. This same ability to protect against the damaging effects of moisture is often equally valuable on wood, plaster, and other surfaces.

The film deposited by a nitrocellulose lacquer properly compounded and applied is harder and more resistant to scratching or wear of any kind, than the films produced by other finishes.

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Lacquered surfaces do not collect dirt as rapidly as other finishes and therefore less frequent cleaning is needed. When the lacquered surface does need to be cleaned, this may be easily accomplished with soap and water without harmful effect upon the finish.

These are the chief points of superiority which are generally admitted for lacquer. There are many other respects in which it is at least the equal of other products used for the same purposes. In a clear, transparent form, it serves to preserve the natural appearance of many surfaces. It is also used to decorate, and it preserves as well.

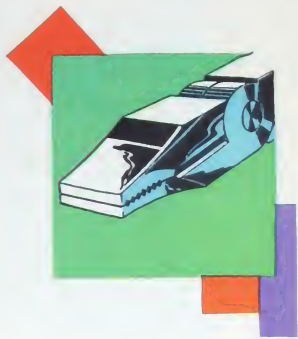
For decorative purposes pigments are added,



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and then it often is called lacquer enamel. It has been claimed that lacquer excels in the beauty, variety, and fastness of the colors that can be obtained with it. It does not seem to us that a claim for superiority over other materials in decorative values is pertinent. Beauty is too much a matter of personal taste to be a fit subject for general claims. It is enough to say that very beautiful color effects are obtained with lacquers. Many of the most lovely pieces of furniture, many engaging interiors, and hundreds of attractive articles of all kinds owe much of their charm to lacquer finishes.

Neither is it necessary to argue whether lacquer is easier or more convenient to apply than other materials. The technique of application differs somewhat from that employed with standard paints, varnishes, and enamels. It is no more difficult once it is learned, but failure to take this difference into account has produced disappointing results. With a proper understanding of correct methods, it is successfully



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applied either by brushing, spraying, flowing, tumbling, or dipping.

Thus far, we have been comparing nitrocellulose lacquers with other materials on the basis of characteristics that are more or less similar. However, lacquers have some properties that are not shared by other paint and varnish products. Solutions of

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nitrocellulose that differ very little from ordinary lacquers also form a cement as strong as the materials it binds; on the other hand, they may be used to bind articles that must be easily detachable.

Nitrocellulose lacquers and solutions have wide application in the textile industry for waterproofing and for decorative purposes. They are used to stiffen the fabric in box toes and also to give a silk-like sheen to soft and pliable materials.

From the foregoing it might be assumed that we advise the use of lacquer wherever a protective or a decorative finish is needed, and for many other purposes. Such an assumption would be wrong. We do not, nor do the responsible manufacturers of lacquer, recommend it as an all-purpose finish. Your requirements may be such that a manufacturer of standing will tell you they cannot be met by any lacquer as yet produced. In this instance, he may be able to formulate one that



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will meet them. He may not know whether existing lacquers will meet them until he has made experiments to find out. They may be such that he can recommend lacquer without hesitation, even though to his knowledge it has never been used for exactly this purpose. In short, the value of the lacquer so far produced is definitely established for many purposes and there are many purposes for which its suitability is doubtful, simply because it has never been tried. Among these, there will be some for which it is adapted and some for which it is not. Rapid as have been the advances in the art of formulating lacquer during recent years, there is every indication that the art is still in its infancy. Much as is now known, there is much more that is unknown. Lacquer has only begun to come into its own.

The list on the following pages is not intended to be comprehensive. It does not include all the well established uses for lacquer, because space would not permit listing them. It would be a



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mistake to consider this list as setting any limits to the uses to which lacquer is applicable. The only reason for including it is the hope it will give you some idea of the wide range of usefulness of lacquer finishes and will lead you to inquire whether your business does not offer an opportunity for widening this range still farther.

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Artificial flowers
 Artificial limbs
 Automobiles

 Baskets
 Bathroom fixtures
 Bobbins for spinning
 Book ends
 Brass beds
 Brass goods
 Bronze statuary
 Broom handles
 Brush handles
 Buckles
 Builders' hardware
 Buttons

 Cameras
 Castors (wood and metal)
 Caskets
 Candlesticks
 Canes
 Celluloid articles
 Clocks and dials
 Coffee pot handles
 Composition articles
 Curtain rods

 Dolls
 Display forms
 Dress findings

 Electric fans
 Electric light bulbs
 Electrical goods

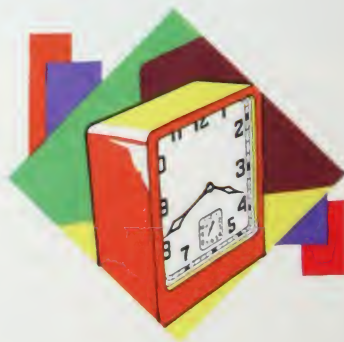
Fibre articles
 Fire extinguishers
 Fishing bait
 Fishing lines
 Fixtures, gas and electric
 Floors
 Furniture

 Games
 Gas mantles
 Glass shades
 Glove fasteners
 Gun stocks

 Handles for hardware
 Hardware, all kinds
 Hats, straw and felt
 Heel counters
 Hooks and eyes

 Jar and bottle caps
 Jewelry

 Lamps
 Lighting fixtures
 Linoleum
 Loud speakers



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Machinery	Scientific instruments
Metal furniture	Shoe eyelets
Metal work, all kinds	Silverware
Meter cases and dials	Steering wheels
Mouldings	Statuary
Musical instruments	Snap fasteners
Name plates	Steam gauges
Novelties	Switch plates
Oil cans	Thermometers
Optical instruments	Thermos bottles
Pencils — wood and metal	Toe caps
Pen holders	Toilet seats and tanks
Pianos	Tools
Piano actions	Toys
Picture frames	Trunk hardware
Plaster of Paris articles	Typewriters
Pumps	Umbrellas
Radio goods and cabinets	Vacuum cleaners
Radio panels	Walls of rooms
Radio spaghetti	Washing machines
Radiators — steam and hot water	Window shades
Safety razors	Wooden novelties

The paint, varnish, and lacquer manufacturers not only make and sell lacquers, but they maintain research departments to supply the information you may want. Without continuous and costly research, it would be impossible to hold a place in the rapidly expanding lacquer business of today.

We have explained some of the merits of nitrocellulose lacquers and solutions which give them a recognized and established position as finishing materials and for other purposes. We

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have also indicated that they are constantly winning a place in new fields and that they will continue to do so. It is our hope that this booklet may suggest new uses to some of those who read it. If it has made you wonder whether lacquer may answer a problem of yours, please consult the firm that supplies your finishing materials.



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